

In the Claims:

Please amend claims 1 and 12 as follows:

1. In a data acquisition unit, a self-tuning filter, comprising:
 - a digital clocking signal;
 - an input of the data acquisition unit coupled to said digital clocking signal,whereby the input reads a value incident on the input when the digital clocking signal changes to a predetermined state; and
 - a clock-tunable filter coupled to said digital clocking signal, whereby the frequency of the clock-tunable filter is adjusted in relation to a sampling frequency at which the digital clocking signal operates.

12. A method of controlling the frequency of a clock-tunable filter, comprising:
 - sensing a frequency at which a digital clocking signal changes state, whereby said digital clocking signal causes an input of a data acquisition unit to read a value incident on the input when the digital clocking signal changes to a predetermined state; and
 - adjusting the frequency of the clock-tunable filter in relationship to the frequency at which the digital clocking signal changes state.

Please add the following claims:

15. A self-tuning filter, having a first input at which is incident a varying digital clocking signal, a second input at which is incident an input signal corresponding to a sensor, and an output at which is incident a filtered signal that is consistent with the input signal received a constant number of samples previously in filtered form.
16. The self-tuning filter of claim 15, wherein the frequency of the self-tuning filter is adjusted continuously in relation to a frequency of the digital clocking signal.
17. The self-tuning filter of claim 15, further comprising a data acquisition device having a clocking input at which is incident the varying digital clocking signal and a sensor input coupled to the output of the self-tuning filter, whereby the filtered signal is read by the data acquisition device at a frequency at which the varying digital clocking signal is received.
18. The self-tuning filter of claim 15, wherein the number of samples is a fractional number of samples.
19. The self-tuning filter of claim 15, wherein the ratio of sampling frequency to filter frequency is constant.
20. The self-tuning filter of claim 15, wherein the filter acts as a low-pass filter on the signal.